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AGRICULTURAL EXPERIMENT STATION

OF THE

COLLEGE OF AGRICULTURE AND
MECHANIC ARTS

WEST RALEIGH

SCUPPERNONG AND OTHER MUSCADINE GRAPES: ORIGIN AND IMPORTANCE.

N. C. COLLEGE OF AGRICULTURE AND MECHANIC ARTS.

THE NORTH CAROLINA
AGRICULTURAL EXPERIMENT STATION,

UNDER THE CONTROL OF THE

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Address all communications to

N. C. AGRICULTURAL EXPERIMENT STATION,
WEST RALEIGH, N. C.

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ORIGIN AND IMPORTANCE OF THE SCUPPERNONG AND OTHER MUSCADINE GRAPES.

By F. C. Reimer, Horticulturist.

One of the most important things connected with the introduction of a new fruit is a careful study of the conditions which surround the plant in its native home. In the planting of fruits during the past, often too little attention has been given to this matter. The home of a species usually indicates the locality or localities that it is best suited to. It determines in a large measure where that fruit can be grown and where it is likely to give best results. A species is more or less a product of the locality in which it originated, as the conditions prevailing there have in a large measure produced it. By natural selection, nature eliminates those forms not adapted to the environment.

This principle is well illustrated by our native fruits. The grapes of the eastern portion of the United States are far better suited to that section than any of the foreign species. This is also true of our native species of plums, blackberries, dewberries and raspberries.

The same principle applies particularly to varieties. A variety is usually best suited to the particular section in which it originated. The varieties of apples, peaches, pears and plums best suited to the Southern States are those which have originated in the South: for example, the Red June and Bonum apples, the Greensboro and Lady Ingold peaches, which originated in this State, reach their greatest perfection here.

The history and development of most of our important native fruits has been determined and recorded. Bailey and Munson have traced the development of our leading species of grapes, except *Vitis rotundifolia*—the Muscadine grape—on which practically nothing has been done. It is rather difficult to determine why this is true, as it is by far the most important species of grape in the South. The history of the different varieties of the Muscadine grape should be fully determined and preserved. This species has always been a very interesting one to North Carolinians, as it is native to the eastern half of the State, and most of the varieties have originated there.

HISTORY OF THE SCUPPERNONG.

Confusion Regarding Early History.—The following opinions have been offered regarding the origin of the Scuppernong: that it is a foreign variety introduced into this country many years ago; that it is a native of Virginia and was brought to North Carolina by the

early settlers; and that it is a native of North Carolina. Of those who hold to the last belief, some claim Tyrrell County and others Roanoke Island as its original home.

Fig. 1.—Characteristic Old Scuppernong Trunk.
(Circumference seven feet six inches.)

Although much has been written regarding this variety during the last half century, no one has indicated how and when the name "Scuppernong" was assigned to it. It is believed by some that this honor belongs to the North Carolina Indians; by others, that it belongs to the early white settlers. Some maintain that the name was taken from Scuppernong River, and others that Scuppernong River was named for the grape.

The writer determined long ago to clear up this confusion. The history has been determined, and the facts, we believe, are of importance to the grape industry of this State and the South, and to horticulture in general.

Collecting the Facts.—It was first necessary to review all of the old books, magazines and periodicals on Southern horticulture and agriculture, especially those on grapes; but very little information could be found regarding the origin of this grape. The most important facts were obtained from files of the old newspapers of the State, especially those published during the early part of the nineteenth century. Information of considerable value was also found in some of the old State and family records.

The writer made an extensive trip to all of the old grape sections in the eastern part of the State. All of the old vines of which any record could be found were examined and carefully measured, and their history was determined as fully as possible. Interviews were held with the descendants of the earliest grape growers; and in this way facts were obtained that throw much light on the subject.

The Original Scuppernong Vine.—It seems to be impossible to locate with absolute certainty the original Scuppernong vine, as no authentic records of the original vine can be found. This, of course, is perfectly natural, as little or no interest was taken in recording the history of any fruits at that early date. The writer feels certain that the original vine was found in northeastern North Carolina, and probably in Tyrrell County.

The earliest authentic record that we have of this grape comes from New Bern, North Carolina. According to a letter by Judge Gaston, dated June 4, 1838, his old neighbor, a Mr. Hickman, brought a young plant of this grape from Tyrrell County, about 1760, and planted it near New Bern, where it became generally known as the Hickman grape.

The most reliable information to be obtained regarding the finding of the original plant of this grape was supplied by the great-granddaughter of the supposed discoverer, Isaac Alexander. The history which has been handed down verbally from generation to generation in that family is, in substance, as follows:

Isaac Alexander went from Mecklenburg to Tyrrell County about the middle of the eighteenth century to take possession of a tract of land granted to him by the English king. In exploring the region, he found not far from Albemarle Sound a wild grapevine bearing large, luscious white grapes. It is said that this was the original vine which many years later was named Scuppernong.

As that region became settled, the vine was rapidly propagated, and, according to several authentic articles, nearly every home in the locality had near it at least one of these vines at the opening of the nineteenth century. It was soon discovered that this grape made ex-

cellent wine, and as early as 1809 extensive plantings of it could be found in the vicinity of Lake Scuppernong. The grape was commonly spoken of as the White Grape.

On December 21, 1809, the following letter, written by Governor Smith, appeared in *The Star,* a newspaper then published at Raleigh, North Carolina:

"Description of an extraordinary and excellent kind of grape produced in the northeastern part of North Carolina, but not generally known even in that State.

"The grape is large and sweet, of the species of the Fox grape, but white; has been cultivated a number of years in the neighborhood of Lake Phelps, but it is not clearly understood whence it originated. It is supposed to be a native. There are few settlers about the lake but what have a grapevine, which is generally planted at the root of some large mulberry, beech or oak tree, or trained along an arbor of poles lying on forks high enough for a person to walk under and gather grapes conveniently. The vines are never pruned, but suffered to run in a rude state, and many people have vines that will make them a barrel of wine.

"The wine is made by gathering the ripe grapes, picking out all those which are green or bruised, and squeezing the juice into a cider press as soon as they are gathered (for if they lie from one day to another the juice will sour and the wine will always have that taste), when it is put in a clean barrel. To every three quarts of grape juice one quart of brandy is added. After three or four days the wine is raked off till it is clear, and when it gets age is much approved of.

"The process above mentioned is that now followed, but as there are several gentlemen of information sending to the people in that neighborhood to make wine for them, a better process may be discovered. Some have tried fermentation, but it did not answer."

Naming the Scuppernong.—On January 31, 1811, *The Star* published under the heading, "North Carolina Wine from Native Grapes," part of a report made by James Blount, of Scuppernong, North Carolina, who had been appointed to take the census of Washington County. In this report he states that Washington County produced thirteen hundred and sixty-eight gallons of wine from native grapes during 1810. Mr. Blount in his report further says:

"Having taken an account of the wine in my division, I think it my duty to state the result of my inquiries on this small but very interesting branch of our infant manufactures.

"The large white grape from which most of this wine is made is said to be a native of America, and probably of North Carolina, as no person can tell its origin; and I feel inclined to join in this opinion, having about three years ago found a vine with ripe fruit on it of this kind in the woods, where it is very improbable it could have been planted. I am told the grape from the seed will be purple and larger than from the cuttings of the vine, though not so sweet. These vines thrive well on various kinds of soil, but delight most in that which is loose and sandy, and if care is taken to manure them for two or three years it will afterwards only be necessary to keep the weeds clear, prune and scaffold them; and one vine is worth more than fifty apple trees."

The editors of *The Star* add the following comments to Mr. Blount's report:

"Our readers will recollect a communication on this singular and excellent species of grape (which for the sake of distinction, until we are better instructed, we shall denominate the Scuppernong Grape) in the 239th page of our first volume. That communication excited considerable interest and procured for us another favour of the same kind from Mr. Cooper, which will be seen in page 38 of our second volume."

The grape was named "Scuppernong" because of the numerous plantings of this variety along the Scuppernong River at that time. The name was also given as a compliment to James Blount, who lived near that river and whose excellent articles on this grape attracted much attention at that time.

At that time, Dr. Calvin Jones and Thomas Henderson were editors of *The Star*. The honor, then, of naming this grape belongs to the editors of a Raleigh (North Carolina) newspaper. It is very probable that it should properly be given to Dr. Calvin Jones, who was a noted naturalist, and edited the agricultural part of *The Star*.

The writer feels certain that this is the first time that this grape was designated as *Scuppernong*. He has not been able to find this name used in any of the earlier writings; and Blount, in his report two years previous to that date, speaks of it as "the large White Grape." The following extracts from a letter written by James Saunders of Chowan County, North Carolina, to the editors of *The Star* and published in that paper April 17, 1812, under the title "Scuppernong Grapes and Wine," also lead to the same conclusion:

"Your publishing with such lively interest the properties of that excellent fruit you have named the 'Scuppernong Grape,' while it appeared you were yourselves quite a stranger to it, has induced me to endeavor to prepare and convey to you, this fall, a few slips of that valuable and most luxurious article.

"The usual or common name given those grapes here is the 'White Fox.' So far as my information goes, I think it is most probably a native of Roanoke Island, near Roanoke Inlet, where some have conjectured Sir Walter Raleigh either found or left them. However, I have heard no person object to the name you have given, nor do I expect that any will, for the neighborhood about Scuppernong for several years has abounded with them, and for some time past the inhabitants have been turning them to good account, and, with the help of the encouraging Star, this branch of economy and industry may be brought to high perfection."

Origin of the Word Scuppernong.—The word Scuppernong is a corruption of the Indian word *ascuponung,* meaning place of the ascupo, ascopo, or askopo. The word *ascopo* was the Algonquin Indian name for the Sweet Bay (*Magnolia glauca*). This tree is very abundant along the Scuppernong River.

On the old maps of the State we find that the word *ascuponung* was gradually changed until it has become badly corrupted. Eman Bowen gives it as *cuscoponung* in 1752. On a map by Joshua Fry, published a little later, it is given as *cusponung*. In 1770 John Collet changes it to *Scuponung*. In 1771 James Cook again changes it to *Scuponing*. Some time between 1775 and 1800 it was finally changed to *Scuppernong*.

Early Names of the Scuppernong.—During the early history of this grape and before the name Scuppernong became generally used, it was known by different names in different localities. The original name was the White Grape. Around New Bern, North Carolina, it was known as the Hickman grape, having been named for a Mr. Hickman who introduced it into that locality. It has also been designated as the Roanoke Grape, White Scuppernong, and Green Scuppernong.

Old Vines on Roanoke Island.

It is often stated that the original Scuppernong vine is still growing on Roanoke Island, where it was first found. The writer feels quite certain that this is a mistake. He examined these vines on Roanoke Island carefully and found that there are five vines of about equal age that undoubtedly were planted there, as they stand in two straight rows. It is true that these vines are very old, but certainly not as old as some in Tyrrell County.

It is not definitely known who carried the young plants of this grape from Tyrrell County to Roanoke Island, but as there was considerable traveling and trading between this island and the mainland along Albemarle Sound, it is readily understood how the vine or vines could have been carried to the island.

It is stated by some that the vines were carried from Tyrrell County to Roanoke Island by Ann Ashbee. This may be possible, as Ann Ashbee in 1799 married Maurice Baum, who in 1797 had purchased the property on Roanoke Island on which the old vines now stand. Certain records seem to indicate, however, that these vines were planted at an earlier date.

SCUPPERNONG A MUSCADINE.

The Scuppernong is a variety of the Muscadine grape, *Vitis rotundifolia*, which grows wild abundantly all through the eastern part of the State. Some writers dispute this, but it is difficult to understand how anyone who has seen the Scuppernong and the wild Muscadine vines can conclude that the Scuppernong is not a native grape. The variety has every characteristic of that species. The trunk, vines, aerial roots, tendrils, leaves, and flowers are characteristic of this species. It is true that the fruit of the Scuppernong is light or whitish in color, while that of the Muscadine is usually dark-purple or black. Still we know that the black Fox grape, *Vitis labrusca*, often produces white-fruited seedlings. Many species normally producing black fruit now and then produce forms which yield white fruit.

Furthermore, the writer has seen a wild Muscadine vine bearing white fruit. (See Fig. 2.) It was found growing wild in the woods on Roanoke Island. He has also seen two white-fruited Muscadines

now growing on the farm of J. A. Swain, Columbia, North Carolina, which were found in the woods near Columbia, by his father, Timothy Swain. Still further proof is that most of the seedlings of the Scuppernong have purple or black fruit and are as typical Muscadines as can be found anywhere. Then, too, the Pee Dee grape is a white-fruited Muscadine that was originally found growing wild in South Carolina.

Fig. 2.—Wild White Muscadine.

IMPORTANCE AND CHARACTERISTICS OF THE SCUPPERNONG.

The Scuppernong was the first American or native grape to be brought into cultivation. It has always been the most important variety of this species and has been more generally planted than all of the other muscadines combined. It became popular as soon as introduced because of its great hardiness—growing and bearing well under neglect, and producing an excellent table grape and wine.

The vine is a vigorous grower and attains immense size, as is seen by Fig. 1, which shows a Tyrrell County vine measuring seven feet six inches around the trunk. It is notably healthy, not being seriously affected by either insects or diseases, and is generally a regular and heavy bearer when growing on suitable soils. It is long-lived; some of the vines now bearing good crops are more than a hundred years

old. One marked peculiarity of the vine is the splitting-up of the main trunk into several divisions, when it becomes very old; also the production of aerial roots when trained on arbors. The vine can be quite readily distinguished from the dark-fruited varieties by the light-colored ends and nodes of the young shoots, the whitish or light-green tendrils and new growths of the aerial roots.

The flowers are perfect, and appear during June in North Carolina. Flowers (and fruit) are borne on the new wood, and not on the old wood, as some of our popular writers have stated. The clusters vary

Fig. 3.—Scuppernong.

considerably in size, containing from one to twenty-five berries, usually being much larger on sandy than on clay soils. The berries are round, large, often becoming an inch in diameter; the color varies from pale green to golden russet; skin thick but tender for a Muscadine. The pulp is tender, juicy, with a sweet, rich, characteristic aromatic flavor; and the quality is very good, especially when grown on sandy soils. The chief defects of this grape are the readiness with which the berries shatter from the cluster when fully ripe, and the

irregularity of ripening of the berries even on the same cluster. The ripening period covers the entire month of September in North Carolina.

The Scuppernong is distinctly a wine grape. It makes a rich, light-colored wine, which has no superior among sweet wines. The large plantings in this State, some of which cover from one hundred to six hundred acres, were made primarily for wine production. A bushel of fruit will produce from three to four gallons of wine.

It is also a good table grape when used soon after gathering; but as the skin is often broken, in picking, where the stem is attached, the fruit sours readily during warm weather. It cannot be shipped successfully except when used for making wine.

This is distinctly a grape for sandy soils, and should never be planted extensively on heavy clay. It is more productive, and the clusters and berries are larger, more juicy and of better quality on sandy or sandy-loam soils than on clay soils.

OTHER IMPORTANT VARIETIES OF VITIS ROTUNDIFOLIA.

Varieties With Dark-colored Fruit.

Flowers.—This excellent late grape comes from Robeson County, North Carolina. It was discovered early in the nineteenth century by William Flowers, about sixteen miles south of Lumberton, in Flowers Swamp. In 1816, Giles Williams visited the parent vine for the purpose of obtaining cuttings. He states that the vine then had the appearance of being about ten or twelve years old. As the fruit of this variety ripens very late and makes an excellent red wine, it soon became the leading black grape in the South for wine making. This is the most popular late variety of this species, the fruit being at its best the latter part of October and during November. The vine is unusually vigorous and is a very heavy bearer. The clusters are large and contain from ten to twenty-five berries, which are large, slightly oblong, purple to black in color, and cling to the cluster unusually well, being equal to any of the bunch grapes in this respect. This is due to the stem being attached on the inside of the fruit, into which the fibro-vascular bundles extend from one-eighth to one-fourth of an inch. This is an important characteristic, as it enables the fruit to be shipped long distances without the shattering of the berries which usually occurs with most of the varieties of this species. The pulp is rather hard and harsh and the flavor is inferior to that of most of the other varieties. For table purposes it has little to recommend it except its late ripening season. For wine making it has no superior; and it will probably make excellent unfermented grape juice. The large clusters and the clinging quality of its berries seem to commend it for breeding work.

Flowers Improved.—This variety was found by J. M. Shipman, about 1869, near Red Hill Swamp, nine miles north of Whiteville, North Carolina. As it has been only locally advertised, it is not generally grown. The variety has a great deal to recommend it, being superior in some respects to its parent, the Flowers. The vine is more vigorous and more productive; the fruit is similar to the Flowers, but the clusters are larger and the berries more oblong and cling tenaciously to the stem, which is attached internally. It ripens as late as its parent, and for wine making and breeding work seems to be equally promising.

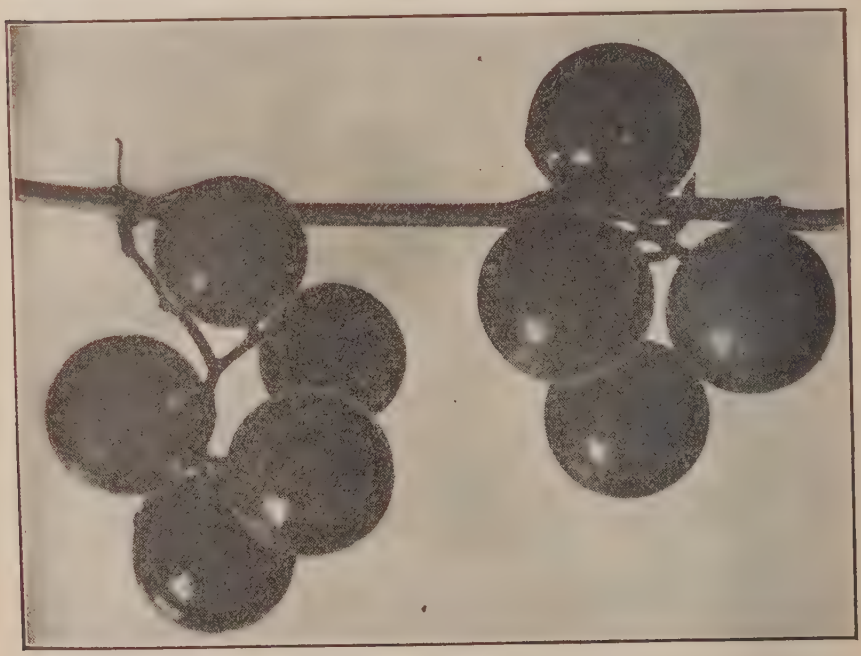

Fig. 4.—James.

James.—This is a native of Pitt County, North Carolina. It was found by B. M. James, in 1866, about three miles south of Parmele, on the Weldon and Kinston Railway. Mr. James was attracted to the grape because of the very large size of the individual berries, and by the fact that they remained on the vines in perfect condition until very late in the season. He propagated the variety and sold it quite extensively. At present it is probably the most widely planted and most popular black grape of this species. The vine is very vigorous and productive; the clusters are of medium size and contain from five to fifteen berries, which are bluish-black

in color and are the largest of any in this group, often measuring an inch and a quarter in diameter. The skin is thin, the pulp tender and juicy, and the quality very good. The chief defect of this variety is the readiness with which the berries shatter from the cluster as soon as ripe. It is much better suited to clay soils than the Scuppernong and is probably the best general-purpose variety of the group.

Hopkins.—This grape was originated near Wilmington, North Carolina, about 1845, by John Hopkins, an English gardener, who came to that place in 1840. It is said to be a cross between a wild

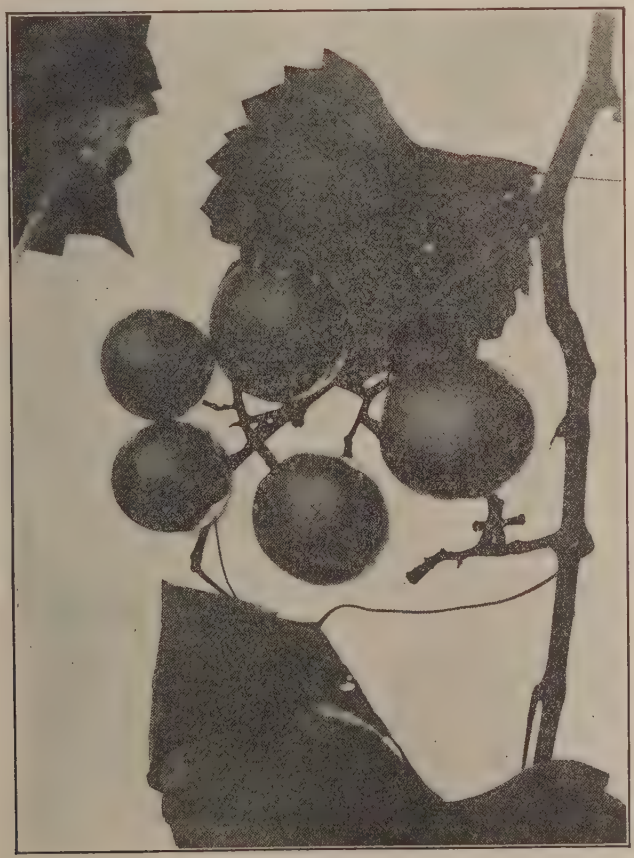

Fig. 5.—Memory.
(Clusters usually larger than that illustrated.)

black grape and the Scuppernong. It is not known at present what the wild black grape was, but it is very probable that it was a muscadine. Others maintain that this variety is simply a superior seedling of the Scuppernong. As the fruit of this grape ripens earlier than

that of any others belonging to this species, and as it is of excellent quality, it is rather strange that this grape has not been more widely grown. The vine is exceedingly vigorous and healthy, the clusters and black berries are large, the pulp is tender, and the flavor unsurpassed. This variety is a valuable member of this group, as it lengthens the ripening season nearly a month, beginning early in August. It should be found in every home vineyard.

Memory.—The Memory was introduced, in 1868, by the late T. S. Memory, of Whiteville, North Carolina. Some of its characteristics and the fact that it was found in his vineyard among some Thomas grapevines indicate that it is a seedling of the Thomas. The grape proved to be an excellent one, and Mr. Memory named it for himself. The vine is probably the most vigorous grower of this group. The fruit ripens in September; the clusters are of good size, and the berries cling to the clusters until they become shriveled. The berries are very large, oval to oblong in shape, and jet-black in color. The pulp is juicy, very tender, exceedingly sweet and delicious. This variety has not become as widely distributed as its good qualities merit. It should be in every home vineyard, and for local market it has no superior in this species.

Mish.—This variety was found by William Henry Mish, about 1846, at Swann Point, on the Pamlico River, about six miles east of Washington, North Carolina. He found it growing in the sand twelve or fifteen feet from the river. The variety was named for the finder and introduced by him shortly after being discovered. It soon attracted much attention and was widely planted throughout the South. Extensive plantings of it can be found at present around Washington, North Carolina. The vines are vigorous and very productive. The clusters are large; the berries medium in size, round, purplish in color, and adhere well to the clusters. The pulp is tender, juicy, very sweet and of exceptionally fine quality. This variety should be planted in every vineyard, because of its fine flavor and good shipping qualities.

Sugar.—This is another variety introduced by the veteran grape grower, T. S. Memory, of Whiteville, North Carolina. It was found by him at Whiteville, between 1865 and 1870. The variety has never been widely grown, and at present the writer is able to locate only a few vines of it. It does not possess any special characteristics to commend it.

Tenderpulp.—Tenderpulp originated in the vineyard of D. P. High, at Whiteville, North Carolina, about 1868. It is very likely a seedling of the Flowers. Although the pulp is very tender, it is low in sugar content, and of poor quality. It has nothing to commend it except its exceedingly tender flesh, and its productiveness. Because of its poor quality, it has never become very popular.

Varieties With Light-colored Fruit.

Pee Dee.—The Pee Dee was discovered by some negroes on Dr. H. Williamson's place at Darlington Court House, South Carolina, just prior to the Civil War. During the war, it was brought to Dr. Williamson's attention. It was undoubtedly an accidental seedling, as it was found growing over a fence where everything seemed

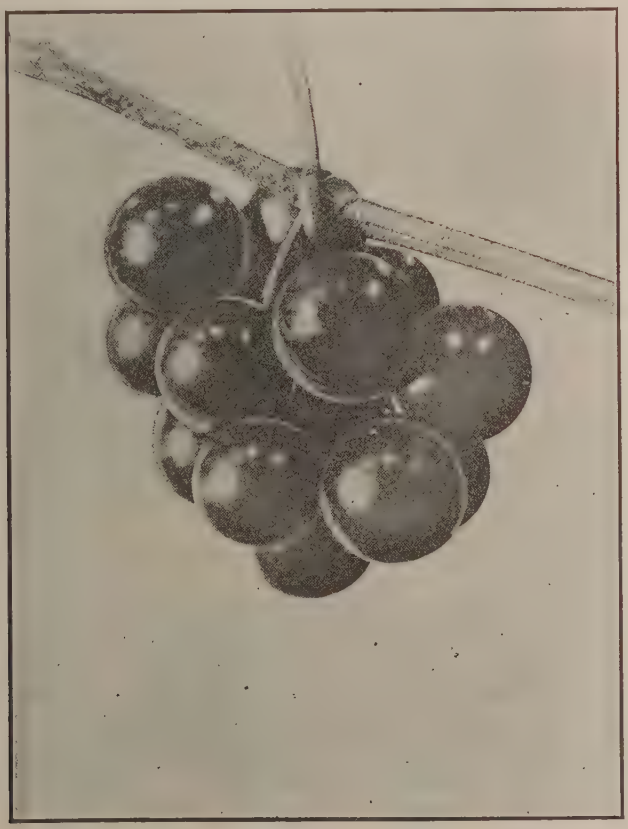

Fig. 6.—Mish.

to indicate that it had not been planted. This variety never became very popular or widely distributed and at present is seldom met with. It is an interesting variety because the color of the berries is similar to that of the Scuppernong. It has nothing to commend it over that variety except its late ripening habit. For wine and jelly it is excellent.

Varieties With Reddish or Reddish-purple Fruit.

Thomas.—This excellent variety was found about 1845, in the woods four miles from Marion, South Carolina, by Drewry Thomas, and takes its name from Mr. Thomas, who introduced it. The variety at once became popular because of its delicious sweetness, and has been widely planted. It is unique as a muscadine because it is the only variety of the species that has reddish or reddish-purple fruit. The vine is not a vigorous grower, but is very productive.

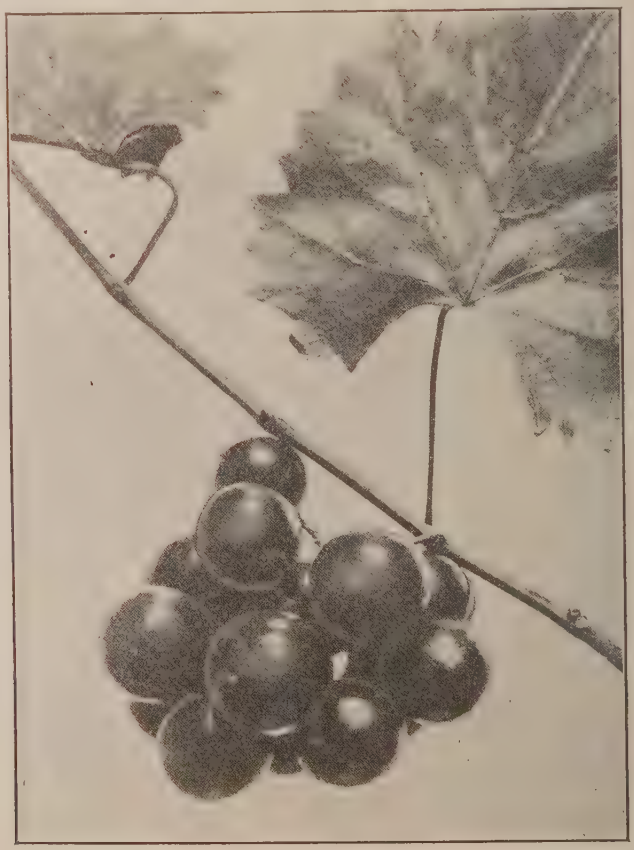

Fig. 7.—Thomas.

The clusters are large, and the berries shatter readily when fully ripe. The fruit ripens early, and the berries are small, round, reddish, with a thin, tender skin. The pulp is tender, juicy, sweet, and exceptionally rich. As a table grape the quality could hardly be im-

proved on. The only other variety that equals it in this respect is the Memory. It should be planted in every vineyard, and if but one variety is to be planted for home use, Thomas is the variety.

Unimportant Varieties.

There are several varieties of this species grown only locally, and it is quite probable that they will never be widely grown, or become of any special importance. Such varieties are Beula, Westbrook, Jeter, and Seedlin.

MEN WHO POPULARIZED THE MUSCADINE GRAPES.

Since North Carolina is responsible for the introduction of most of the varieties of this species, it is only just to mention the names of the men who were largely responsible for their introduction. These men were Thomas Blount, of Washington County; Hickman, of Craven County; Calvin Jones, of Wake County; Sidney Weller, of Halifax County; Henry Mish, of Beaufort County; T. S. Memory and D. P. High, of Columbus County; L. Froelich, of Duplin County; and J. Van Buren, of Georgia.

RECOMMENDATION OF VARIETIES.

a. For home use:
Hopkins, Thomas, Scuppernong, Mish, Memory and Flowers Improved.

b. For wine:
Scuppernong, James, Flowers and Flowers Improved.

c. For unfermented grape juice:
James, Mish, Memory and Flowers.

d. For general market:
Mish, Memory and Flowers Improved.

IMPORTANCE OF MUSCADINE GRAPES IN THE SOUTH.

The varieties of this species have always been the most important grapes in the warmer sections of the South. They are especially well adapted to the climatic and soil conditions of the Coastal Plain region from southeastern Virginia to Texas. The vines grow luxuriantly, and as the bloom appears very late, they are regular bearers. The fruit is practically free from fungous diseases and is very rarely attacked by insects. Most of the muscadines ripen their fruit comparatively late in the season, after most other grapes are gone, and at the best season for wine making. Most other grapes grown in the South are quite subject to rot and insect injury, and the vines are short-lived.

MUSCADINES IN NORTH CAROLINA.

The Muscadine grapes are not equally well adapted to all parts of the State. They reach their greatest perfection in the Coastal Plain section. This, of course, is quite natural, as it is the home of most of these varieties. The climatic and soil conditions there are admirably suited to them.

They also do well in the Sand Hill region of the State. Even on the poor, white, dry sandy soils where few other plants thrive, these grapes reach a high degree of development.

They will grow quite well in the Lower Piedmont section, and especially on sandy soil, but the clusters are much smaller and the flavor inferior to those grown in the Coastal section. This is especially true on clay soils. For commercial purposes they should not be planted in this section.

Attempts to grow them in the Mountain and Upper Piedmont sections have usually resulted in failure. While the vines grow well in the Upper Piedmont, they very seldom bear fruit. They should not to be planted extensively at an elevation greater than six hundred to seven hundred feet.

MUSCADINES FOR MARKET.

These grapes are especially well suited to the family vineyard and for wine making, and may be marketed with some degree of success. Considerable objection has been raised against them for market purposes because of the small size of the clusters, but this objection does not always hold, as some of the varieties bear as many as fifteen to twenty-five berries to the cluster. Other things being equal, the clusters are much larger when grown on sandy soils than on clay soils. With some of the varieties the fruit shatters readily from the cluster as soon as ripe; with others the berries cling as tenaciously to the cluster as with any other variety of grapes.

UNFERMENTED GRAPE JUICE.

The question is often asked whether these grapes can be used successfully for making unfermented grape juice. Careful experiments by one of the largest wine manufacturers in the South show that some varieties of this species, especially the dark-fruited varieties, are well suited for this purpose. The writer knows of no reason why this should not become an important industry in the South. Although the Scuppernong does not seem to be so well suited for this purpose as the dark-fruited varieties, yet carefully conducted tests have shown that it may be successfully used.

SELF-STERILITY IN MUSCADINE GRAPES.

One of the most important questions connected with the growing of Muscadine grapes is whether or not they are self-sterile. At present this cannot be definitely answered, at least for all varieties; and more and better work will have to be done to determine this point. Certainly the same answer may not apply to the group as a whole. It is possible that some varieties will prove to be self-fertile and others self-sterile. Undoubtedly soil and climatic conditions have some influence on fertility in this group. Some of the varieties, notably the Scuppernong, appear to be more nearly self-sterile on the clay soils in the Piedmont section than on the sandy soils in the Coastal section. Some Scuppernong vines appear to be self-fertile and others self-sterile under apparently similar conditions.

The writer's work, while confined to only one season and one section of the State, gave decided results. A large number of flower clusters of the Scuppernong and Flowers were covered with paper bags before the flowers opened, and not a single fruit was produced. On the same Scuppernong vines other flower clusters were covered similarly, but later when the stigmas became receptive a flower cluster from a *male* vine was tied to each of these Scuppernong flower clusters. Three-fifths of these matured normal-size clusters of fruit.